Commonwealth of Pennsylvania
DEPARTMENT OF PUBLIC INSTRUCTION
Harrisburg

Manual of Instruction

COURSE 12

INCREASING SOYBEAN PRODUCTION

Rural War Production Training Program

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Prepared under the authority of the State Board for Vocational Education by the Department of Rural Education, The Pennsylvania State College

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PREFACE

Course 12, Increasing Soybean Production, is one of a series of courses which have been prepared in the "Food for Victory" program. The objective has been to set forth in brief form the phases of the soybean industry considered pertinent to the immediate problem of Increasing Soybean Production in Pennsylvania.

This manual is organized into five sections:

I. SUGGESTED COURSE CALENDAR
II. INTRODUCTION
III. SUGGESTED LESSON OUTLINES
IV. SUGGESTED REFERENCE MATERIAL
    Books (A)
    Bulletins and Circulars (B)
    Visual Aids (C)
V. SUGGESTED APPROVED PRACTICES WHICH SHOULD DEVELOP FROM THE COURSE

The manual was prepared by Russell B. Dickerson, Itinerant Teacher-Trainer, Specialist in Young and Adult Farmer Instruction, Department of Rural Education, The Pennsylvania State College. The preparation was directed by H. C. Fetterolf, Chief, Agricultural Education, State Department of Public Instruction; and Henry S. Brunner, Head, Department of Rural Education, The Pennsylvania State College.

Special recognition is given to Dr. C. F. Noll, Head, Department of Agronomy, and to Professor J. B. R. Dickey of Agronomy Extension, The Pennsylvania State College, for invaluable assistance and guidance in setting up the suggested lesson outlines and in deciding upon the most current references pertinent to Increasing Soybean Production.

I. SUGGESTED COURSE CALENDAR

Lesson Number	Name of Job	Date of Meeting
1	Increasing Soybean Production in War-time	
2	Phases and Adaptations of Soybean Production in Pennsylvania	
3	Choosing and Purchasing Adapted Varieties of Soybean Seed for this Area	
4	Determining the Rotation and Cultural Practices for Soybeans	
5	Determining the Date, Method, and Rate of Planting Soybeans	
6	Determining the Approved Harvesting Practices for Soybeans	
7	Determining the Approved Storage Practices for Soybeans—Beans, Hay, and Silage	
8	Utilizing the Soybean Crop on the Farm	
9	Marketing Soybeans	
10	Growing Edible Soybeans for Home and Market	

II. INTRODUCTION

This manual was prepared as a guide to teachers and supervisors in conducting instruction with young and adult farmers in the OSYA "Food for Victory" program. It is designed to facilitate more effective preparation by the teachers undertaking to meet the emergency need through commodity courses.

The ten (10) suggested lesson topics or jobs were selected after careful analysis of the whole field of soybean production, in conference with Dr. C. F. Noll and Professor J. B. R. Dickey. The lesson outlines are purely suggestive and it is expected that each lesson will be modified to meet local conditions.

In many instances jobs other than the ten included herein will be considered important enough in certain sections of the commonwealth to be included along with, or instead of, some of those listed. It is expected also that more than one meeting will be necessary to give satisfactory instruction in some jobs.

The aims and the problems for study and discussion set up in each of the ten lesson outlines are considered applicable to the respective jobs but they are by no means considered all-inclusive. If any or all of the suggested problems for study and discussion are incorporated into a similar course of study the suggested references will be found helpful to the busy teacher. They are offered for the express purpose of bringing teacher efficiency to its best.

The reference materials suggested on pp. 17-19 are considered pertinent to the immediate problem of Increasing Soybean Production. It is advised that at least one copy of each should be available for easy reference. It is assumed that a variety of references that are pertinent to Increasing Soybean Production, are already on hand in most schools. They will probably include texts, bulletins, charts, film strips and others, and they may furnish a large part of the reference material needed. It is important however, to use the most current references for approved practices in meeting emergency problems. The bulletins of The Pennsylvania Experiment Station are prepared for Pennsylvania conditions and they generally are the most reliable sources available.

For the convenience of the teacher, the suggested reference materials on pp. 17-19 are given by key designation as follows: Books (A), Bulletins and Circulars (B), and Visual Aids (C). In preparing a lesson on any one job, the teacher will find specific references to the different problems suggested. For example, (1) if the reference is A-1, p. 7, it refers to material on page 7 of the first book listed, the material found there is considered pertinent

to the problem suggested; (2) if the reference is B-3, it refers to bulletin No. 3 on the list and implies that the content of the entire bulletin is pertinent to the problem; (3) if C-6 is given as a reference it will refer to item No. 6 in the Visual Aids list.

The suggested approved practices which should develop from the course are set forth on p. 20 as guides to the teacher. During each lesson certain conclusions should be reached which should result in the adoption of approved practices by individual farmers. These will constitute the basis for the program of follow-up instruction.

Teachers who plan to organize and conduct a course in Increasing Soybean Production are urged to follow the suggestions given in another manual of instruction in the series entitled, "Suggestions to Teachers and Supervisors for the Development and Conduct of Agricultural Commodity Courses."[1]

The suggestions set forth in that manual were prepared for the purpose of aiding individuals in organizing and conducting Agricultural Commodity Courses in the Rural War Production Training program. The manual includes the following sections:

I. Objectives of Courses in the Increased Production of Farm Commodities.
II. Things To Do Before Organizing a Commodity Course.
III. Form for Surveying Out-of-School Rural and Non-Rural Persons.
IV. Suggested Teacher Preparation.
V. A Suggested Teaching Plan Using the Conference Procedure.
VI. The Importance of Current References.
VII. Providing Follow-Up of Instruction.

[1] Rural War Production Training, State Department of Public Instruction, Harrisburg, Pa.

III. SUGGESTED LESSON OUTLINES

JOB 1. INCREASING SOYBEAN PRODUCTION IN WAR-TIME

A. Teaching aim—To develop the ability of the farmer—

1. To meet the demands for increasing quantities of soybeans for livestock feeding, for war purposes, and for food.

B. References for this lesson—(see key list on pp. 17-19)

1. (A)—1, 2
2. (B)—1, 2, 3, 4, 5, 6, 7, 8, 9, 15, 18, 26, 27, 28, 30, 34, 35
3. (C)—1, 2, 22

C. Suggested problems for study and discussion—

1. The need for increased production of soybeans. B-1; B-2; B-3; B-5; C-1
2. Soybean oil is needed for food and war materials. B-4; C-2; B-27
3. Analyzing the economic position of soybeans. B-26; B-6; B-7; B-8; A-1, pp. 1154-1160; C-22
4. Surveying the soybean enterprise with respect to increasing the production of beans.
   a. Soybeans harvested for beans in U. S., in Pa., and locally. C-1; B-3
      (1) Production and price
   b. Soybeans grown for hay and silage in U. S., in Pa., and locally. C-1; B-3
      (1) Production and price
   c. Soybean trends. C-1; B-3; B-9; B-8; A-2, p. 323; B-26
   d. Adaptation in local farming situations. B-3; B-6; B-7; B-8
5. Soybean research. A-2, pp. 323-326; B-15, p. 163; B-18
6. Financing the soybean enterprise.
   a. Secure credit and credit information from—
      (1) The local bank
      (2) The production credit association
      (3) The farm security administration
      (4) The commodity credit corporation

JOB 2. PHASES AND ADAPTATIONS OF SOYBEAN PRODUCTION IN PENNSYLVANIA

A. Teaching aims—To develop the ability of the farmer—
   1. To discover the phases of soybean production best adapted to individual farming situations.
   2. To analyze the factors that influence opportunities to increase profitable soybean production in this area.

B. References for this lesson—(see key list on pp. 17-19)
   1. (A)—1, 2
   2. (B)—6, 7, 8, 11, 12, 25, 33, 34
   3. (C)—2, 27

C. Suggested problems for study and discussion—
   1. Uses for soybeans. B-25
      a. Beans for oil—food and war purposes. C-2
      b. Feed for livestock (protein hay). B-8; B-6
      c. Feed for livestock (protein supplement). B-8
      d. Soil-building. B-6; B-11, p. 5; B-12, p. 475; A-2, p. 319; C-27; B-33
      e. Emergency hay crop. B-12, p. 472
      f. Seed production. B-8; B-7
   2. Adaptation of soybeans. A-1, p. 1164
      a. Soil. B-6; B-7; A-2, p. 314
         (1) Acidity tolerance (2) Types best suited
         (3) Fertility required (4) Drainage
      b. Climate. B-6; B-7; A-2, p. 314
         (1) Rainfall needed
         (2) Temperature extremes
         (3) Growing season—length
   3. Farm enterprise relationship. B-6; B-7
      a. Livestock
         (1) Forage (2) Grain
      b. Cash crop
   4. Advisability of raising soybeans. B-6; B-7; B-5
      a. Consider the factors favorable to establishing the enterprise.
         (1) Time required for producing and marketing.
         (2) Yields in Pennsylvania
         (3) Costs
            (a) Land rental
            (b) Machinery required and availabilty
            (c) Cultural and harvesting operations necessary
            (d) Storage and marketing facilities required
   5. Soybeans and corn as companion crops. B-12, pp. 493-497

JOB 3. CHOOSING AND PURCHASING ADAPTED VARIETIES OF SOYBEAN SEED FOR THIS AREA

A. Teaching aims—To develop the ability of the farmer—
   1. To select varieties that are adapted and desirable.
   2. To purchase good seed from reliable sources.

B. References for this lesson—(see key list on pp. 17-19)
   1 (A) 1, 2
   2. (B) 6, 7, 10, 12, 24, 28, 34
   3. (C) 5, 6

C. Suggested problems for study and discussion—
   1. Choose well adapted varieties. A-2, p. 315; B-24; B-6; B-7; B-10, p. 17; C-5
      a. Manchu is standard for seed; in northern Pa. for hay
      b. Black Wilson and Kingwa for hay in southern half of State
      c. Scioto and Chief for beans in southern half of State
      d. Richland will mature in nearly all sections of the State.
   2. Varietal characteristics. B-12, pp. 516-526
      a. Plant characters. A-1, pp. 1169-1174
      b. Seed characters. A-1, pp. 1175-1179
   3. Sources of reliable seed.
      a. Good seed companies
   4. Characteristics of quality seed.
      a. Age—loses germination rapidly
      b. Adapted varieties—climatic requirements. A-2, p. 315
      c. Clean—(free from morning glory seed)
   5. Running germination tests on soybean seed.
      a. Need for germination tests. A-2, p. 315
      b. Methods of testing. C-6
         (1) Rag doll
         (2) Sawdust or dirt
      c. Send sample to Bureau of Plant Industry, Dept. of Agriculture, Harrisburg, Pa.

JOB 4. DETERMINING THE ROTATION AND CULTURAL PRACTICES FOR SOYBEANS

A. Teaching aims—To develop the ability of the farmer—

1. To discover a place in the rotation for soybeans in individual farming situations.
2. To use approved cultural practices for soybean production.

B. References for this lesson—(see key list on pp. 17-19)

1. (A)—2
2. (B)—6, 7, 11, 12, 24, 28, 33, 34
3. (C)

C. Suggested problems for study and discussion—

1. Where should soybeans enter the usual crop rotation? B-6; B-7; A-2, p. 314; B-33
   a. Follows corn nicely for hay and silage.
   b. Difficult to follow with wheat when beans are harvested.
2. How may the rotation be changed to accommodate increased soybean production? B-6; B-7; B-11, p. 8
3. Preparing the seedbed for soybeans. B-6; B-7; B-12, p. 478
   a. Prepare like that for corn. A-2, p. 315
      (1) Get ground ready early and get it well worked
   b. Plowing sods
   c. Using the disc
4. Cultivation and weed control. B-11, p. 15; B-12, pp. 485-488; A-2, p. 317
   a. Methods
   b. Frequency

JOB 5. DETERMINING THE DATE, METHOD, AND RATE OF PLANTING SOYBEANS

A. Teaching aim—To develop the ability of the farmer—

1. To plant soybeans in accordance with approved practices.

B. References for this lesson—(see key list on pp. 17-19)

1. (A)—2
2. (B)—6, 7, 11, 12, 15, 20, 21, 22, 28, 29, 34
3. (C)—2, 3, 4, 7, 20, 21, 23, 24, 25, 26

C. Suggested problems for study and discussion—

1. Recommended planting dates for Pennsylvania. B-6; B-7; B-11, p. 13; A-2, p. 316
   a. Northeastern
   b. Southeastern
   c. Central
   d. Northwestern
   e. Southwestern
2. Requirements for germination. B-6; B-7; B-11; B-12, p. 482
   a. Moisture
   b. Temperature
3. Methods of planting. B-11, p. 14; B-15, p. 142
   a. Broadcast or drill
   b. In rows
4. Rate of planting. B-6; B-7; B-11, p. 14; B-15, p. 142; A-2, p. 316
   a. Broadcast
   b. In rows
5. Depth of planting. B-11, p. 14; B-6; B-7
   a. Heavy soils
   b. Light soils
6. Applying lime and fertilizer. B-6; B-7; B-11, p. 7; B-20, p. 4; B-21; B-22; C-7; B-29; C-21; C-23; C-24; C-25; C-26; C-28
   a. Amounts and methods
7. Inoculation of soybeans is important. B-6; B-7; B-11, p. 12; B-12, pp. 479-482; A-2, p. 316; C-2; C-3; C-4; B-32

JOB 6. DETERMINING THE APPROVED HARVESTING PRACTICES FOR SOYBEANS

A. Teaching aims—To develop the ability of the farmer—

1. To harvest the crop for maximum yields of high quality beans, hay, or silage.
2. To use approved harvesting equipment efficiently.

B. References for this lesson—(see key list on pp. 17-19)

1. (A)—2
2. (B)—6, 7, 8, 11, 12, 13, 14, 28, 34
3. (C)—8, 9, 10, 13

C. Suggested problems for study and discussion—

1. Deciding upon the best harvesting practice for this area. A-2, p. 317
   a. Using the combine—for grain. B-6; B-7; B-8, pp. 5-8; B-13; B-11, p. 15; B-14, pp. 6-8; B-12, p. 489
      (1) Dates for combining
      (2) Condition of plants for combining
      (3) Machine adjustment necessary
   b. Using the binder—for grain and hay. B-6; B-8, pp. 1-5; B-13; B-11, p. 15; B-14, pp. 4-6
      (1) Dates for binding
      (2) Condition of plants for sheaves
   c. Using the mowing machine—for grain, hay, and silage. B-6; B-8, pp. 1-5; B-11, p. 15; B-14, pp. 4-6; B-12, p. 489
      (1) Dates for hay
      (2) Condition of plants for hay
      (3) Dates for grain
      (4) Condition of plants for grain
      (5) Dates for silage
      (6) Condition of plants for silage
   d. Threshing soybeans. B-7; B-13; B-12, p. 490
      (1) When slightly damp
      (2) Avoid split and cracked beans

JOB 7. DETERMINING THE APPROVED STORAGE PRACTICES FOR SOYBEANS—BEANS, HAY, AND SILAGE

A. Teaching aims—To develop the ability of the farmer—

1. To store soybeans for a maximum quality product of beans, hay, and silage.
2. To store soybeans economically for beans, hay, and silage.

B. References for this lesson—(see key list on pp. 17-19)

1. (A)—2
2. (B)—6, 8, 13, 15, 16, 34
3. (C)—9, 11, 13

C. Suggested problems for study and discussion—

1. Constructing and preparing bins for the beans
   a. Cleaning
   b. Repairing
   c. Providing ventilation
2. Storing soybeans—Pay attention to moisture content. B-6; B-8, p. 12; B-13; B-15, pp. 149-162
   a. Maximum moisture content for safe storage. A-2, p. 318
   b. Methods of reducing moisture
   c. Elevate for aerating
   d. Run through fanning mill
   e. Divide into large bins
3. Storing soybean roughage.
   a. For hay. B-8, p. 4
      (1) Mow
      (2) Stacks or barracks
   b. For silage. B-16, pp. 10-18
      (1) Fineness of cutting
      (2) Moisture content desired
      (3) Preservatives needed

JOB 8. UTILIZING THE SOYBEAN CROP ON THE FARM

A. Teaching aims—To develop the ability of the farmer—

1. To feed soybean hay, ground beans, and silage efficiently.
2. To feed soybean hay and ground beans as protein supplements.

B. References for this lesson—(see key list on pp. 17-19)

1. (A)
2. (B)—11, 17, 18, 33, 34
3. (C)—8, 9, 10, 11, 12, 13

C. Suggested problems for study and discussion—

1. For hay
   a. Dairy cattle. B-17, p. 10
   b. Beef cattle. B-17, pp. 12-14
   c. Swine. B-17, p. 31
   d. Sheep. B-17, pp. 23-25
   e. Horses and mules. B-17, pp. 27-29
   f. Poultry. B-17, p. 44
2. For feed, ground whole beans, oil cake or oil meal
   a. Milk production. B-17, p. 7; B-18, pp. 38-42
   b. Beef production. B-17, pp. 16-21; B-18, pp. 44-45
   c. Egg production
   d. Poultry meat production } B-17, pp. 42-44; B-18, pp. 53-56
   e. Pork production. B-17, pp. 32-41; B-18, pp. 47-52
   f. Mutton, lamb, and wool production. B-17, pp. 25-26; B-18, pp. 44-45
3. For silage
   a. Dairy cattle. B-17, p. 8
   b. Beef cattle. B-17, p. 16
   c. Swine
   d. Sheep
   e. Poultry
4. Plowing the crop under for green manure. B-11, p. 4; B-33
5. Plowing the straw under for humus. B-11, p. 5
6. Soybean oil meal as a fertilizer. B-18, p. 57

JOB 9. MARKETING SOYBEANS

A. Teaching aim—To develop the ability of the farmer—
   1. To market beans for seed, for feed, for food, and for oil.

B. References for this lesson—(see key list on pp. 17-19)
   1. (A)—2
   2. (B)—12, 13, 18, 34
   3. (C)—8, 9, 10, 11, 12, 13, 14, 15, 16

C. Suggested problems for study and discussion—
   1. Determining market grades. B-13
   2. Market beans for oil. B-12, p. 528
   3. Market beans for seed
      a. Contact reliable seed companies
   4. Market beans for feed—soybean cake. B-12, p. 527
   5. Market beans for food. B-12, pp. 528-530
      a. Soybean oil
      b. Soybean flour
      c. Dry soybeans
      d. Immature or green soybeans
   6. Industrial uses of soybean oil meal. A-2, p. 320; B-18, pp. 59-61; B-12, p. 526

JOB 10. GROWING EDIBLE SOYBEANS FOR HOME AND MARKET

A. Teaching aims—To develop the ability of the farmer—
   1. To select seed of adapted varieties and produce edible soybeans for home and market use.
   2. To utilize the edible soybean, its products, and food by-products effectively in the diet.

B. References for this lesson—(see key list on pp. 17-19)
   1. (A)
   2. (B)—12, 19, 23, 31
   3. (C)—14, 16, 17, 18, 19

C. Suggested problems for study and discussion—
   1. Characteristics of different varieties. B-19, pp. 422-425
   2. Varieties recommended. B-19, p. 426
      a. Green shell for home or market
      b. Green shell for canning
      c. Ripe beans for table use
   3. Sources of reliable seed
      a. Good seed companies
   4. Method of culture. B-19, pp. 427-433
      a. Time of planting
      b. Preparation of seed bed
      c. Distance and depth of planting
      d. Equipment for planting
      e. Inoculation of seed
      f. Tillage
   5. Damage from rabbits and groundhogs
      a. Guard against it in small plantings.
   6. Harvesting green soybeans. B-19, p. 434
   7. Harvesting, curing, and threshing ripe soybeans
      a. Harvesting and curing. B-19, p. 435
      b. Threshing. B-19, p. 436
   8. Handling the threshed beans. B-19, p. 437
   9. Directions for shelling and cooking green soybeans. B-19, p. 439; B-12, p. 530; B-23; B-31
      a. Recipes
   10. Directions for cooking and serving ripe soybeans. B-12, p. 529; B-23; B-31
      a. Recipes
   11. Directions for using soybean flour. B-12, p. 529

IV. SUGGESTED REFERENCE MATERIAL

Books (A)

1. U. S. D. A., Yearbook of Agriculture, 1937
2. Cox and Jackson, Field Crops and Land Use. J. Wiley & Sons, Inc., N. Y. 1942

Bulletins and Circulars (B)

1. The Agricultural Situation, Bureau of Agricultural Economics, U. S. D. A.
2. Crops and Markets, Bureau of Agricultural Economics, U. S. D. A.
3. Soybean Outlook material, Department of Agricultural Economics, The Pennsylvania State College
4. Soybean Oil and The War, Bureau of Agricultural Economics Extension Flier—5 (BAE-EXT Flier—5) U. S. D. A.
5. Agriculture's Wartime Production Capacity, An Interbureau Committee Report, U. S. D. A.
6. Soybeans in Pennsylvania, Leaflet 36, The P. S. C.
7. Growing Soybeans for Seed. Mimeo. 3/42-M/2, Dept. of Agronomy, The P. S. C.
8. Soybean Hay and Seed Production, F. B. 1605, U. S. D. A.
9. Soybean Trends. Reprint J-6, American Potash Institute, Inc., 1155 16th St., N.W., Washington, D. C.
10. Science for the Farmer, Bul. 399, The P. S. C.
11. Farming with Soybeans. Bul. 207, Agrl. Ext. Ser., Ohio State University, Columbus, Ohio
12. Soybean Production in Illinois. Bul. 310, Univ. of Illinois, Agrl. Exp. Sta., Urbana, Ill.
13. Harvesting, Storing and Marketing Soybeans. Ext. Pamphlet 104, Univ. of Minn., Agrl. Ext. Ser., St. Paul, Minn.
14. Methods and Machinery for Harvesting Soybeans. Bul. 319, Va. Agrl. Exp. Sta., Blacksburg, Va.
15. Eleven Years of Soybean Investigation, Varieties, Seeding, Storage. Bul. 462, Univ. of Illinois, Agrl. Exp. Sta., Urbana, Ill.
16. Grass Silage—How To Make It—How To Feed It. Educational and Research Bureau for By-Product Ammonia, 50 W. Broad St., Columbus, Ohio.
17. Utilizing The Soybean Crop in Livestock Feeding. Cir. 369, Univ. of Illinois, Agrl. Exp. Sta., Urbana, Ill.
18. The Composition and Nutritive Properties of Soybeans and Soybean Oil Meal, Soybean Nutritional Research Council, 3818 Board of Trade Bldg., Chicago, Ill.

19. Eighteen Varieties of Edible Soybeans, Bul. 453, Univ. of Ill., Agrl. Exp. Sta., Urbana, Ill.
20. Fertilizing Farm Crops, Cir. 208, The P. S. C.
21. Potash Saves Alfalfa, Clover, and Soybeans. Reprint FF-8, American Potash Institute, Inc., 1155 16th St., N.W., Washington, D. C.
22. Fertilizing Soybeans. Pamphlet 133, The National Fertilizer Association, Investment Bldg., Washington, D. C.
23. Soybeans for The Table, Leaflet 166, U. S. D. A.
24. Soybeans: Culture and Varieties. F. B. 1520, U. S. D. A.
25. Soybean Utilization. F. B. 1617, U. S. D. A.
26. Soybeans in the United States: Recent Trends and Present Economic Status. T 619, U. S. D. A.
27. An Outlet for Soybean Oil. American Soybean Asso., Hudson, Iowa.
28. Soy Beans for Profit. John Deere, Moline, Ill.
29. Why Soybeans Should Be Fertilized. Reprint BB-11-41, American Potash Institute, Inc., 1155 16th St., N.W., Washington, D. C.
30. The Soybean Digest, Official Publication of The American Soybean Association, Hudson, Iowa
31. Recipes for Soybean Food, The Edison Institute, Dearborn, Mich.
32. Plant Legumes To Prosper—Inoculating. The Nitragin Co., Inc., Milwaukee, Wis.
33. Soybeans—their effect on soil productivity. Bul. 456, Agrl. Exp. Sta., University of Illinois, Urbana, Ill.
34. Soybeans—Their Production, Improvement and Utilization in Indiana. An Instructional Aid for Teachers of Vocational Agriculture. Vo. Ed. Bul. 8, Agrl. Ed. Series 6, Purdue Univ., Lafayette, Indiana
35. Uses of the 1940 Census Data in Schools, Monograph, U. S. Office of Education, Washington, D. C.

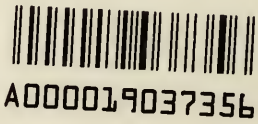
Visual Aids (C)

1. 1943 Agricultural Outlook Charts, Bureau of Agricultural Economics, U. S. D. A.
2. Soybeans Inoculated with Nitragin (bottle of roots and nodules in solution). The Nitragin Co., Inc., Milwaukee, Wis.
3. Grow Better Legumes for Feed. Chart, The Nitragin Co., Inc., Milwaukee, Wis.

4. Legumes. Chart, The Nitragin Co., Inc., Milwaukee, Wis.
5. Variety specimens.
6. Germination equipment—rag doll, dirt or sawdust testers.
7. Samples of lime and fertilizers.
8. Samples of soybeans harvested with combine, binder, and mower.
9. Samples of soybean hay harvested with binder and mower.
10. Samples of soybean straw.
11. Samples of soybeans from different places and types of storage.
12. Samples of ground soybeans (soybean meal), soybean oil meal.
13. Samples of soybean silage.
14. Samples of soybean oil.
15. Samples of soybean plastics and other commercial products.
16. Samples of soybean products—flour, milk, prepared foods.
17. Variety specimens of edible beans.
18. Dishes of baked, boiled, and roasted soybeans for refreshment.
19. Recipes to take home.
20. Plant-Food Utilization. Chart, American Potash Institute, Inc., 1155 16th St., N.W., Washington, D. C.
21. Pennsylvania Fertilizer Chart. Armour Fertilizer Works, Baltimore, Md.
22. The Soybean — Uses — Derivatives — Applications. Archer-Daniels Midland Co., Minneapolis, Minn.
23. Lime Need of Soils—Eastern Half of U. S.—Chart. National Lime Asso., Washington, D. C.
24. Sampling and Testing the Soil—Chart. National Lime Asso., Washington, D. C.
25. pH and Its Application—Chart. National Lime Asso., Washington, D. C.
26. Use Lime When Needed—Chart 3. The National Fertilizer Asso., Washington, D. C.
27. Grow Soil Improving Crops—Chart 6. The National Fertilizer Asso., Washington, D. C.
28. Potash Starved Legumes—Chart. American Potash Institute, Inc., 1155 16th St., N.W., Washington, D. C.

V. SUGGESTED APPROVED PRACTICES WHICH SHOULD DEVELOP FROM THE COURSE

1. Increase the production of soybeans efficiently.
2. Adapt soybean production to individual farming situations.
3. Choose soybean seed of adapted varieties that are desirable for local situations.
4. Purchase soybean seed from reliable sources.
5. Adapt the soybean crop to the usual crop rotation as well as possible.
6. Follow recommended cultural practices for soybean production.
7. Plant soybeans in accordance with recommended dates, methods, and rates of seeding for local situations.
8. For maximum yield of beans, hay, or silage, harvest the soybean crop with recommended equipment.
9. For maximum quality of beans for seed, for oil, for feed, or for food, store in accordance with recommended practices.
10. Store soybean hay and silage for highest quality feeding value.
11. Feed soybeans efficiently for increased production of milk, eggs, poultry for meat, beef, pork, mutton, lamb, and wool.
12. Market soybeans for oil, for seed, for food, for feed, and for plastics and other war materials.
13. Choose seed of adapted varieties of edible soybeans.
14. Produce and utilize edible soybeans efficiently for home and market purposes.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